SECTION 03 15 00

CONCRETE ACCESSORIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Joint fillers.

B. Joint sealing compound.

C. Elastomeric joint seals.

D. Plastic pads, spacers, and fillers.

1.02 RELATED SECTIONS

A. Waterstops are specified in Section 03 15 13 - Waterstops.

B. Elastomeric bearing pads are specified in Section 03 15 15 - Elastomeric Bearing Pads.

C. Elastomeric noise abatement seals at trackway acoustical barriers are specified in Section 03 40 00 - Precast Concrete.

D. Metal stair nosings, armor protection for concrete edges, metal anchors, inserts, sleeves, and various metal accessories related to cast-in-place concrete work are specified in Section 05 50 00 - Metal Fabrications.

E. Expansion and seismic control joints are specified in Section 07 95 00 - Expansion Control.

F. Calking and sealants related to the sealing of openings in walls and weatherproofing of station structures are specified in Section 07 90 00 - Joint Protection.

1.03 MEASUREMENT AND PAYMENT

A. Measurement: Concrete accessories will not be measured separately for payment.

B. Payment: Concrete accessories will be paid for as part of the indicated Contract unit price or lump-sum price for the associated concrete or paving work as indicated in the Bid Schedule of the Bid Form.

1.04 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM C272 Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions

2. ASTM C578 Specification for Rigid, Cellular Polystyrene Thermal Insulation

3. ASTM C920 Specification for Elastomeric Joint Sealant

4 ASTM D994 Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)

5. ASTM D1190 Specification for Concrete Joint Sealer, Hot-Applied Elastic Type

6. ASTM D1621 Test Method for Compressive Properties of Rigid Cellular Plastics

7. ASTM D1622 Test Method for Apparent Density of Rigid Cellular Plastics

8. ASTM D1751 Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)

9. ASTM D2628 Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements

10. ASTM D3405 Specification for Joint Sealants, Hot-Applied, for Concrete and Asphalt Pavements

11. ASTM D3406 Specification for Joint Sealant, Hot-Applied, Elastomeric-Type, for Portland Cement Concrete Pavements

12. ASTM D3542 Specification for Preformed Polychloroprene Elastomeric Joint Seals for Bridges

13. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials

1.05 SUBMITTALS

A. General: Refer to Section 01 33 00 - Submittal Procedures, and Section 01 33 23 - Shop Drawings, Product Data, and Samples, for submittal requirements and procedures.

B. Shop Drawings: Submit drawings showing locations of all joints to be filled and sealed.

C. Product Data: Submit manufacturers' product data of joint fillers, sealing compounds, elastomeric joint seals, and plastic materials, verifying compliance with specified requirements.

D. Samples: Submit 12-inch long sample of joint filler and elastomeric joint seals and one pint can of sealing compound.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Joint Filler: Premolded, of sizes and thickness indicated, conforming to ASTM D994 or ASTM D1751, as applicable.

1. For structural joints and joints subject to movement, provide elastomeric joint seals conforming to ASTM D2628 or ASTM D3542, as applicable.

B. Joint Sealing Compound: Concrete joint sealant, conforming to ASTM C920 (Type S or M, Class 25, Use T), ASTM D1190, ASTM D3405, or ASTM D3406, as applicable, for sealing of expansion (isolation) and contraction (control) joints in slabs and at junctions of slabs and vertical surfaces.

Color of joint sealant shall be as selected by the Engineer from manufacturer's standards.

1. For asphalt pavements, provide ASTM D3405 sealant only. For concrete pavements and roadways, provide ASTM C920 or ASTM D3406 sealant.

C. Elastomeric Joint Seals: Preformed solid or multi-web design, virgin crystalization-resistant polychloroprene (neoprene) conforming with ASTM D2628 or ASTM D3542, as applicable. Seals shall be designed to function in a compressed installation mode.

1. Lubricant Adhesive: ASTM D2628 or ASTM D3542, as applicable.

D. Plastic Pads, Spacers, and Fillers: Extruded closed-cell polystyrene rigid board meeting requirements of ASTM C578, Type V, with the following physical properties:

1. Minimum weight and density when tested in accordance with ASTM D1622: 3.0 pounds per cubic foot.

2. Minimum compressive strength when tested in accordance with ASTM D1621: 100 pounds per square inch.

3. Maximum water absorption when tested in accordance with ASTM C272: 0.10 percent by volume.

4. Maximum allowable flame spread when tested in accordance with ASTM E84: 10 flame-spread index (UBC Class I).

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that joint surfaces are dry to the extent necessary for successful sealant application and long service life as recommended by the sealant manufacturer.

B. Verify also that ambient and concrete-surface temperatures and humidity are within the ranges recommended by the manufacturer for successful sealant application.

3.02 PREPARATION

A. Thoroughly clean joints free of dirt, debris, dust, and laitance.

B. Prime joint surfaces, where required, as recommended by the manufacturer of the joint sealing compound or elastomeric joint seal, as applicable.

C. Mix multi-component sealing compound as recommended by the manufacturer.

3.03 INSTALLATION

A. Installation/Application Requirements: Joint fillers and sealing compounds shall be installed in accordance with the respective manufacturers' installation and application instructions. Comply also with ASTM D1190, ASTM D3405, Appendix XI., and ASTM D3406, Appendix XI., for application of sealants, as applicable. Coordinate the placement of joint fillers and securing them in position with the work of Section 03 11 00 - Concrete Formwork.

B. Expansion (Isolation) Joints:

1. Provide premolded joint filler to full depth of slabs, less 1/2 inch. Install joint filler with top edge 1/2 inch below the surface, and tool adjacent concrete edges to a 1/4-inch radius. Use steel pins to hold material in place during placing and floating of concrete. Finished joints shall be tight and leakproof.

2. After a minimum of 28 days after slabs have been placed and finished, fill expansion joints with joint sealing compound to 1/8 inch below surface of slabs. No traffic shall be permitted to travel over sealed joints until sealing compound has properly cured.

C. Contraction (Control) Joints: Saw-cut contraction joints and weakened plane joints shall be filled with joint sealing compound in areas and locations indicated. Joints shall be filled and tooled flush to within 1/16 inch of the slab surface.

D. Roadway and Bridge: Provide elastomeric joint seals as applicable to the conditions. Install as indicated and in accordance with the manufacturer's installation instructions and recommendations.

E. Plastic Pads, Spacers, and Fillers: Install as indicated over or against clean surfaces. Apply adhesive where required to hold material in place.

END OF SECTION 03 15 00